

WHAT IS CLAIMED IS:

1. A method for separating a sapphire wafer serving as a substrate, on which semiconductor elements are formed, into
5 unit chips, comprising the steps of:

(a) grinding a rear surface of the sapphire wafer so that the sapphire wafer has a designated thickness;

(b) lapping the rear surface of the ground sapphire wafer so that the sapphire wafer has a designated thickness;

10 (c) dry-etching the rear surface of the lapped sapphire wafer so that the sapphire wafer has a uniform thickness; and

(d) scribing the rear surface of the dry-etched sapphire wafer.

15 2. The method as set forth in claim 1,
wherein the step (c) is performed by an RIE (Reactive Ion Etching) method.

3. The method as set forth in claim 1,
20 wherein the step (c) is performed for 50 seconds or more.

4. The method as set forth in claim 1,
wherein the sapphire wafer is dry-etched by 800Å or more in the step (c).

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5. The method as set forth in claim 1,
wherein an RF bias voltage of at most 26W is imposed on
the sapphire wafer in the step (c).